

GY462

REAL ESTATE FINANCE

Lecture Syllabus —*Lent Term 2011/2012*

Course Manager and Lecturer

Dr. Olmo Silva (Room S506a)

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Office hours: Usually Monday 16:30 – 18:00 (check directly with lecturer)

Seminar Teachers

Philippe Bracke (p.bracke@lse.ac.uk)

Office hours: TBC

Lecture and Seminar Times

Lectures

Nine lectures by Dr. Olmo Silva, usually on **Mondays 9:00-11:00**.

One guest lecture by E. Linden (CB Richard Ellis & MSc REEF alumni) will be scheduled during Week 6. This will take place on **Wednesday 15th February, 6-8pm**.

A second guest lecture will be given by Marcel Safar (Daniel-Rene' Commercial Real Estate, Boston-MA) during Week 9. This will take place on **Wednesday 7th March, 6-8pm**.

Attendance to both these sessions and preparation for the related case-study discussions is considered compulsory.

Seminars

Students will be divided in four groups:

-Group 1: Thursday 14:00-16:00

-Group 2: Thursday 16:00-18:00

-Group 3: Friday 09:00-11:00

-Group 4: Fridays 12:00-14:00

Seminars are held every two weeks (fortnightly) and run in Weeks 2, 4, 6, 8 and 10. Mr. Philippe Bracke will teach the seminars.

Teaching Method

The GY462 course consists of 9 x 2 hour lectures, 2 x 1½-2 hour guest lectures and 5 x 1½-2 hour seminars. The lectures are intended to convey to you a conceptual understanding and analytical competence in the evaluation of real estate investment and financing decisions. The guest lectures are meant to complement the material presented during the lectures with insights from the real estate practice. Finally, the seminars will focus on helping you solve the homework assignments and prepare for the exams.

Teaching Material

Lecture notes are typically available prior to the lecture and can be downloaded/accessed using the GY462 Moodle page.

Assessment

The assessment is by means of a formal two hour written examination in the Summer Term. The exam paper will contain four questions. Candidates should attempt two questions.

Course Objectives and Requirements

The course aims to provide students with concepts and techniques for analyzing financial decisions in real estate development and investment. Topics include: Basic real estate investment analysis; financial leverage; fixed rate mortgage loans and more flexible mortgage arrangements; mortgage payment issues; debt securitization; REITs; real options; and international aspects of real estate finance. The course is intended (and compulsory) for students of the MSc Real Estate Economics and Finance. The course is optional for students of the MSc Accounting and Finance and MSc Management and Regulation of Risk. The course is available for other students with suitable qualification in finance (subject to Dr. Silva's and the respective programme director's approval). It is assumed that students already have a good knowledge of asset market theory. A **basic financial calculator** (e.g., a Texas Instruments BA 2 Plus) is **required for both seminars and exams**. You are responsible for knowing how to compute annuities, present values, etc. with your calculator.

Syllabus—*Lent Term 2011/2012* (Provisional)

GY462—Real Estate Finance

LECTURE (*Dr. Olmo Silva*)

Introduction and Overview

I REAL ESTATE INVESTMENT ANALYSIS AND FINANCIAL LEVERAGE

Part 1: Investment Analysis

- Valuation of income producing properties, including: discounted cash flow methods; shortcut methods; choice of discount rate
- Pro-forma
- Investment decision
- Risk assessment
- Land valuation, including: traditional approach; real option approach

Part 2: Financial Leverage

- Leverage and returns
- Leverage and yield/growth
- Leverage and risk
- Other reasons to borrow or not to borrow

II MORTGAGE BASICS & ANALYSIS

Part 1: Fixed rate mortgage loans

- Basic formula
- Applications
- Effective cost of borrowing

Part 2: Mortgage payment issues

- Inflation
- Reducing monthly payments (GPMs, ARMs, SAMs)

Part 3: More flexible mortgage arrangements

- Participation loans
- Convertible mortgages
- Sale-leaseback of the land

Case Study I: Analysis of a Property: Investing and Leveraging (Eric Linden, CB Richard Ellis)

Case Study II: Analysis of a Property: Redeveloping and Managing (Marcel Safar, Daniel Rene' Commercial Real Estate, Boston-MA)

III REAL ESTATE CAPITAL MARKETS AND SECURITIES

Part 1: Real Estate Investment Trusts (REITs)

- REITs and UPREITs
- REIT valuation

Part 3: Debt securitization

- The evolution of the Secondary Mortgage Market
- Residential Mortgage Backed Securities (RMBS); including: risks and risk allocation; main types of RMBS; pricing issues and prepayment rates
- Commercial Mortgage Backed Securities (CMBS), including: characteristics of CMBS; comparison with RMBS; and structuring a CMBS deal (tranching)

Part 3: The Dynamics of the Subprime Mortgage Crisis

- Facts and explanations: What happened? And why?
- Implications for RE financial markets and RE real activities
- Policy interventions and the debate on the role of regulation in finance

IV INTERNATIONALISATION OF REAL ESTATE MARKETS (time permitting)

Part 1: Some stylized facts: Scope for international diversification?

Part 2: International trends: Is there a trend towards a global RE cycle?

GY462—Real Estate Finance

SEMINAR (*Mr. Philippe Bracke*)

- 1 Problem Set 1—Real Estate Investment Analysis
- 2 Problem Set 2—Pro-Forma & Financial Leverage
- 3 Problem Set 3— Mortgage Analysis
- 4 Problem Set 4—Case Study with Pro-Forma Calculations
- 5 Problem Set 5—Real Estate Market Securitization

Reading List (*Provisional*)

The reading list below is provisional. A revised version of this reading list may be handed out during the term. All listed readings are available either at the library or on-line or on the Moodle course page.

I Main Text Book

There are two main textbooks that will be used throughout the term:

- [1] **BRUEGGEMAN, W. B. AND J. D. FISHER**, 2004, *Real Estate Finance & Investments* (12th Edition or more recent), McGraw-Hill International, New York (N.Y.).

The book is usually available at LSE's Waterstone bookstore. The order lag is usually two to three working days. The book can also be borrowed from the LSE library. **Since nearly all chapters are compulsory reading, it makes a worthwhile buy.**

- [2] **LINNEMAN, P**, 2004, *Real Estate Finance & Investments: Risks and Opportunities*, 2nd edition (or more recent).

This book is self-published by the author (who is a well-known academic as well as a successful practitioner in the real estate industry) and can be ordered via www.linnemanassociates.com/textbook.html. The book is also available at the LSE library. The book omits certain topics that are relevant for the lectures. However, it provides excellent insights into the key concepts of real estate finance and investment strategy (from a theoretical as well as practical point of view). **This second reference is also worth buying.**

II Other Recommended Real Estate Economics and Finance Textbooks

- [3] **GELTNER, D. AND N. G. MILLER**, 2001, *Commercial Real Estate Analysis and Investments* (1st Edition or more recent), Mason, OH: South Western.
- [4] **BALL M., C. LIZIERI AND B. MACGREGOR**, 1998, *The Economics of Commercial Property Markets*, Routledge.
- [5] **BROWN G. R. AND G. A. MATYSIAK**, 2000, *Real Estate Investment. A Capital Market Approach*, Essex, UK: FT Prentice Hall.

III Provisional Reading List by Lecture

(Note: the chapters listed below follow Brueggeman & Fisher, 12th edition and Linneman 2nd edition. More recent versions of the books contain similar material, though chapter numbering might be different)

Lecture 1 — Real Estate Investment Analysis I

(Introduction and Overview—Investment Analysis)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 3, 9 & 10 (intro chapters, valuation)
- [2] LINNEMAN, Chapters 1-3 (intro chapters)

Other Recommended Readings

- [1] BRUEGGEMAN & FISHER, Chapters 1 (legal concepts)

Lecture 2 — Real Estate Investment Analysis II

(Investment Analysis—Basics)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 10, 11 & 13 (investment and risk analysis)
- [2] LINNEMAN, Chapters 6-8 (due diligence, cap rates, pro-forma)

Lecture 3 — RE Investment Analysis III & Financial Leverage

(Land Valuation—Real Options—Financial Leverage)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 12 & 13 (financial leverage, real options)
- [2] LINNEMAN, Chapter 12 (financial leverage)

Other Recommended Readings

- [1] Bulan, L., C. Mayer and T. Somerville (2006): “Irreversible Investment, Real Options, and Competition: Evidence From Real Estate Development”, NBER Working Paper number 12486.

Lecture 4 — Mortgage Basics & Analysis I

(Fixed Rate Mortgage Loans—Mortgage Payment Issues)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 2, 4 & 6 (fixed rate, residential)

Lecture 5 — Mortgage Basics & Analysis II

(Mortgage Payment Issues, Cont. —More Flexible Mortgage Arrangements)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 5 & 12 (flexible arrangements, alternatives)

Other Recommended Readings

- [1] BRUEGGEMAN & FISHER, Chapter 8 (financing residential properties)

CASE STUDY I – Analysis of a Property: Investing and Leveraging (*E. Linden, CBRE*)

CASE STUDY II – Analysis of a Property: Redeveloping and Managing (*M. Safar, Daniel Rene’ Commercial Real Estate, Boston-MA*)

Lecture 7 — Real Estate Capital Markets and Securities I

(Real Estate Investment Trusts)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapter 21 (REITs)
- [2] LINNEMAN, Chapter 18 (REITs)

Other Recommended Readings

- [1] LINNEMAN, Chapter 17 (RE Private Equity Funds as alternative to REITs)
- [2] Ambrose, B. W., M. J. Highfield and P. Linneman (2005): “Real Estate and Economies of Scale: The Case of REITs”, *Real Estate Economics* **33**(2), 323-350.

Lecture 8 — Real Estate Capital Markets and Securities II

(Debt Securitization)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapters 19 & 20 (secondary market)
- [2] LINNEMAN, Chapter 14 (CMBS)
- [3] Frame, W. S. and L. J. White (2005): “Fussing and Fuming over Fannie and Freddie: How Much Smoke, How Much Fire?” *Journal of Economic Perspectives* **19**(2), 159-184.

Other Recommended Readings

- [1] Passmore, W. (2005) “The GSE Implicit Subsidy and the Value of Government Ambiguity”, *Real Estate Economics* **33**(3), 465-486.

Lecture 9 — The Dynamics of the Subprime-Mortgage Crisis

(provisional; to be updated as more research becomes available)

- [1] Buiter, W (2008): “Lessons From the North Atlantic Financial Crisis”, paper presented at the conference on “The Role of Money Markets”, Columbia University and Federal Reserve Bank of New York, My 2008.
- [2] Dell’Arriccia G., D. Igan and L. Laeven (2008): “Credit Booms and Lending Standards: Evidence From the Subprime Mortgage Markets”, CEPR Discussion Paper n.6683.
- [3] Kiff, J. and P. Mills (2007): “Money for Nothing and Checks for Free: Recent Developments in US Subprime Mortgage Markets”, IMF WP/07/188.
- [4] Gorton, G. (2008): “The Panic of 2007”, NBER Working Paper number 14358.
- [5] Mian, A. and A. Sufi (2008): “The Consequences of Mortgage Credit Expansion: Evidence From the 2007 Mortgage Default Crisis”, mimeo, University of Chicago, Graduate Business School.
- [6] Keys, B., T. Mukherjee, A. Seru and V. Vig (2008): “Did Securitization Lead to Lax Screening? Evidence From Subprime Loans 2001-2006”, mimeo, London Business School.

Other Recommended Readings

- [1] Reinhart, C. and K. Rogoff (2008): “Is the 2007 US Sub-Prime Financial Crisis So Different? An International Historical Comparison”, NBER Working Paper number 13761.
- [2] Feldstein, M. (2007): “Housing, Credit Markets and The Business Cycle”, NBER Working Paper number 13471.
- [3] Pagano, M. and P. Volpin (2010); “Credit Ratings Failures and Policy Options”, *Economic Policy*, April 2010.
- [4] Readings in the symposium on “Early Stages of the Credit Crunch” published in the *Journal of Economic Perspectives*, Vol. 23, Number 1, Winter 2009.
- [5] Readings in the symposium on NBER Housing Programme Conference, Cambridge, MA. Available at: <http://www.nber.org/~confer/2011/HFC11/HFC11prg.html>

Lecture 10 — Internationalisation of Real Estate Markets (time permitting)

(Scope for International Diversification—Trends in International Real Estate)

Compulsory Readings

- [1] BRUEGGEMAN & FISHER, Chapter 22 (portfolio and performance considerations)
- [2] Sirmans, C.F. and E. Worzala (2003): “International Direct Real Estate Investment: A Review of the Literature”, *Urban Studies* **40**(5/6), 1081-1114.
- [3] Worzala, E. and C.F. Sirmans (2003): “Investing in International Real Estate Stocks: A Review of the Literature”, *Urban Studies* **40**(5/6), 1115-1149.

Recommended Readings

- [1] Bond, S.A., G.A. Karolyi and A.B. Sanders (2003): “International Real Estate Returns: A Multifactor, Multicountry Approach”, *Real Estate Economics* **31**(3), 481-500.
- [2] Case, B., Goetzmann, W.N. and K.G. Rouwenhorst (2000): “Global Real Estate Markets-Cycles and Fundamentals”, NBER Working Paper number 7566.

Note on the Handouts

- The handouts are designed as ‘skeleton’ lecture notes. They provide the ‘bare bones’ of the lecture. They are the absolute essentials such as key points, precise definitions, or difficult-to-draw graphs. Skeleton notes leave you to ‘flesh out’ the subject matter in your own words.
- The handouts are intended to free you from excessive note-taking so that you can take a more active part in the session. They are intended to help you organize and reflect on course material.
- The handouts are by no means complete. Furthermore, reading lecture notes without attending the lecture can be misleading. The handouts do not dispense you from doing these three things:
 1. Attend the lectures – Understanding lecture notes is much easier after the lecture
 2. Do the readings – Handouts can at best provide an overview and summary of a particular topic. Readings help you reflect, question, and understand a particular subject matter
 3. Reflect and think about the issues and the problems – This is the main objective of the handouts
- As we assess analytical skills and critical independent thinking, do not reproduce lecture notes in exams, essays and dissertations. Reproducing lecture notes does not demonstrate your ability to think and to use what you have learned intelligently. It just demonstrates that you have a good memory.
- Finally, feedback on handouts/lecture notes is highly appreciated. Knowing what is unclear and could be improved helps me improving the effectiveness of my teaching and your learning.